



March 26, 2006

SHAW-MC-CK10-1076  
Project No. 796887

Mr. Lee Coker  
U.S. Army Corps of Engineers, Mobile District  
Attn: EN-GE/Lee Coker  
109 St. Joseph Street  
Mobile, Alabama 36602

**Contract: DACA21-96-D-0018, Task Order CK10  
Fort McClellan, Alabama**

**Subject: Supplemental Soil Sampling at the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X**

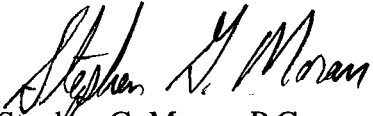
Dear Mr. Coker:

Based upon the decisions made during the March 19, 2007 teleconference including the Alabama Department of Environmental Management (ADEM), U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), and the Army, Shaw will collect thirteen additional surface soil samples and four additional subsurface soil samples at the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X and Impact Areas, Parcels 133Q-X and 134Q-X. Table 1 presents the sampling rationale and Table 2 presents the proposed sample depths and analytical parameters. The proposed soil sample locations are shown on Figure 1.

Soil sampling activities will follow the procedures in the Installation-Wide Sampling and Analysis Plan (SAP). The SAP addresses the supplies and equipment to be used and procedures for field personnel. All work conducted during this field effort will be performed in accordance with the Installation-Wide Safety and Health Plan and the attached Site-Specific Safety and Health Plan. The presence of unexploded ordnance (UXO) is possible at these ranges. Therefore, Shaw will conduct UXO avoidance procedures as outlined in the attached Site-Specific Munitions and Explosives of Concern (MEC) Safety Plan and Appendix E of the SAP.

At your request, I have distributed copies of this work plan as indicated below. Shaw is prepared to initiate field activities during the week of March 26, 2007. If you have any questions, or need further information, please contact me at (865) 694-7361.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen G. Moran". The signature is fluid and cursive, with the first name "Stephen" and last name "Moran" clearly legible.

Stephen G. Moran, P.G.  
Project Manager

Enclosure

Distribution: Lisa Holstein, U.S. Army TF (6 copies; 2 CDs)  
Brandi Little, ADEM (2 copies, 1 CD)  
Doyle Brittain, EPA Region 4 (1 copy; 1 CD)  
Richard Henry, USFWS (1 copy)  
Peter Tuttle, USFWS (2 copies)  
Steve Miller, USFWS (2 copies)  
Ricky Ingram, USFWS (2 copies)

**Table 1**

**Supplemental Soil Sampling Locations and Rationale  
Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range,  
Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Alabama**

<b>Sample Location</b>	<b>Sample Media</b>	<b>Sample Location Rationale</b>
HR-92Q-GP12	Surface and Subsurface Soil	Surface and subsurface soil samples will be collected within the former Trench Training Area and Large Mounds downslope (northwest) of HR-92Q-GP01, HR-92Q-GP02 and HR-92Q-GP03 located within the observed physical feature 3, as shown on Figure 1.
HR-92Q-GP13	Surface and Subsurface Soil	Surface and subsurface soil samples will be collected within the former Trench Training Area and large mounds northeast of HR-92Q-GP01, HR-92Q-GP02 and HR-92Q-GP03 located within observed physical feature 3, as shown on Figure 1.
HR-92Q-GP14	Surface Soil	A surface soil sample will be collected within the hill slope area in the southeast portion of the area of investigation, between Parcels 93Q-X and 92Q-X, as shown on Figure 1.
HR-92Q-GP15	Surface Soil	A surface soil sample will be collected within the hill slope area in the southeast portion of the area of investigation, between Parcels 93Q-X and 92Q-X, as shown on Figure 1.
HR-92Q-GP16	Surface Soil	A surface soil sample will be collected approximately 100 feet northwest of existing sample location HR-134Q-GP02 to confirm or deny presence of cadmium and other metals previously detected in this area.
HR-92Q-GP17	Surface Soil	A surface soil sample will be collected approximately 150 feet northeast of existing sample location HR-134Q-GP02 to confirm or deny presence of cadmium and other metals previously detected in this area.
HR-92Q-GP18	Surface and Subsurface Soil	Surface and subsurface soil samples will be collected within the shallow depression/trenches in the northern portion of Parcel 134Q-X as shown on Figure 1.
HR-92Q-GP19	Surface and Subsurface Soil	Surface and subsurface soil samples will be collected within the shallow depression/trenches in the southern portion of Parcel 134Q-X as shown on Figure 1.
HR-92Q-GP20	Surface Soil	A surface soil sample will be collected in the bare area located within the former Defendum Grenade Range shown on Figure 1.
HR-92Q-GP21	Surface Soil	A surface soil sample will be collected at the mounds near observed physical features 6 and 14, as shown on Figure 1.
HR-92Q-GP22	Surface Soil	A surface soil sample will be collected in the area where Foster Wheeler found OE scrap items adjacent to and west of Syracuse Street, as shown on Figure 1.
HR-92Q-GP23	Surface Soil	A surface soil sample will be collected in the area of pop-up target pits, trenches, and wood-lined underground bunker area located within observed physical feature 8, as shown on Figure 1.
HR-92Q-GP24	Surface Soil	A surface soil sample will be collected at the ground scar with several 2.36-inch rocket fins and pieces located within observed physical feature 11, as shown on Figure 1.

Table 2

**Supplemental Soil Sample Designations and Analytical Parameters  
Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range,  
Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Alabama**

Sample Location	Sample Designation	Sample Depth (ft bgs)	QA/QC Samples		Analytical Parameters
			Field Duplicates	MS/MSD	
HR-92Q-GP12	HR-92Q-GP12-SS-PS0033-REG	0-1		HR-92Q-GP12-SS-PS0033-MS/MSD	TAL Metals
	HR-92Q-GP12-DS-PS0034-REG	2-4			
HR-92Q-GP13	HR-92Q-GP13-SS-PS0035-REG	0-1	HR-92Q-GP13-SS-PS0036-FD		TAL Metals
	HR-92Q-GP13-DS-PS0037-REG	2-4			
HR-92Q-GP14	HR-92Q-GP14-SS-PS0038-REG	0-1			TAL Metals
HR-92Q-GP15	HR-92Q-GP15-SS-PS0039-REG	0-1			TAL Metals
HR-92Q-GP16	HR-92Q-GP16-SS-PS0040-REG	0-1		HR-92Q-GP16-SS-PS0040-MS/MSD	TAL Metals
HR-92Q-GP17	HR-92Q-GP17-SS-PS0041-REG	0-1			TAL Metals
HR-92Q-GP18	HR-92Q-GP18-SS-PS0042-REG	0-1			TAL Metals
	HR-92Q-GP18-DS-PS0043-REG	2-4			
HR-92Q-GP19	HR-92Q-GP19-SS-PS0044-REG	0-1			TAL Metals
	HR-92Q-GP19-DS-PS0045-REG	2-4			
HR-92Q-GP20	HR-92Q-GP20-SS-PS0046-REG	0-1			TAL Metals
HR-92Q-GP21	HR-92Q-GP21-SS-PS0047-REG	0-1			TAL Metals
HR-92Q-GP22	HR-92Q-GP22-SS-PS0048-REG	0-1			TAL Metals
HR-92Q-GP23	HR-92Q-GP23-SS-PS0049-REG	0-1			TAL Metals
HR-92Q-GP24	HR-92Q-GP24-SS-PS0050-REG	0-1	HR-92Q-GP24-SS-PS0051-FD		TAL Metals

FD - Field duplicate.

ft bgs - Feet below ground surface.

MS/MSD - Matrix spike/matrix spike duplicate.

QA/QC - Quality assurance/quality control.

REG - Field sample.



**Final  
Site-Specific Safety and Health Plan Attachment  
Supplemental Soil Sampling at Former Tank Ranges,  
Parcels 92Q-X and 93Q-X, Former Grenade Range,  
Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan  
Calhoun County, Alabama**

**Prepared for:**

**U.S. Army Corps of Engineers, Mobile District  
109 St. Joseph Street  
Mobile, Alabama 36602**

**Prepared by:**

**Shaw Environmental, Inc.  
312 Directors Drive  
Knoxville, Tennessee 37923**

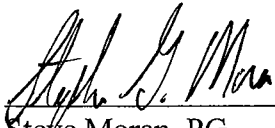
**Task Order CK10  
Contract No. DACA21-96-D-0018  
Shaw Project No. 796887**

**March 2007**

The following Site-Specific Safety and Health Plan (SSHP) has been designed for the methods presently contemplated by IT Corporation (IT) for execution of the proposed work. Therefore, the SSHP may not be appropriate if the work is not performed by or using the methods presently contemplated by IT. In addition, as the work is performed, conditions different from those anticipated may be encountered and the SSHP may have to be modified. Therefore, IT only makes representations or warranties as to the adequacy of the SSHP for currently anticipated activities and conditions. This Site-Specific Safety and Health Plan must be used in conjunction with the Installation-Wide Safety and Health Plan and Installation-Wide Ordnance and Explosives Management Plan, Fort McClellan, Alabama.

## Site-Specific Safety and Health Plan Attachment Approval Fort McClellan, Calhoun County, Alabama

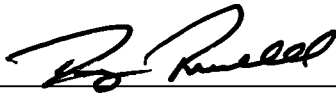
I have read and approve this site-specific safety and health plan attachment for the additional soil sampling at Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and Shaw Environmental, Inc. procedures.



Steve Moran, PG  
Project Manager

3/26/07

Date



Doug Russell  
Health & Safety Manager

3-26-07

Date



Jeff Tarr, PG  
Site Coordinator

3-22-07

Date

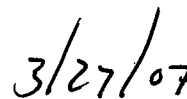
## **Acknowledgements**

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The approved version of this site-specific safety and health plan (SSHP) attachment for the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, Fort McClellan, Alabama, has been provided to the site coordinator. I acknowledge my responsibility to provide the site coordinator with the equipment, materials, and qualified personnel to implement fully all safety requirements in this SSHP attachment. I will formally review this plan with the health and safety staff every 6 months until project completion.



Project Manager

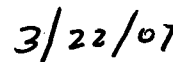


Date

I acknowledge receipt of this SSHP attachment from the project manager, and that it is my responsibility to explain its contents to all site personnel and cause these requirements to be fully implemented. Any change in conditions, scope of work, or other change that might affect worker safety requires me to notify the project manager and the health and safety manager.



Site Coordinator



Date



I have been informed of additional soil sampling and will abide by the procedures set forth in this site-specific safety and health plan attachment for site investigations associated with the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, Fort McClellan, Alabama.

**Date**This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## Fort McClellan Gate Hours

Galloway Gate	Galloway Road. Open 6 am to 6 p.m. Monday through Friday
Baltzell Gate	Baltzell Road. Open 24 hours daily, 7 days a week.

## Fort McClellan Project Emergency Contacts

Range Control Office (Main Post).....(256) 848-6772  
Fire Department (off post) .....911  
Ambulance (off post) .....911  
Northeast Regional Medical Center .....(256) 235-5121  
Occupational Clinic .....(256) 236-9400  
Anniston Police Department .....(256) 238-1800  
National Response Center & Terrorist Hotline.....(800) 424-8802  
Poison Control Center.....(800) 222-1222  
EPA Region IV .....(404) 562-8725  
Lee Coker, U.S. Army Corps of Engineers, Mobile District .....(251) 690-3099  
Doug Russell, Shaw H&S Manager..... Direct Dial (865) 692-3584, cell (865) 414-9545  
Jeff Tarr, Shaw Site Manager ..... Direct Dial (256) 848-3482, cell (256) 310-4376  
UXO Reporting (Lisa Holstein).....(256) 848-7455  
Steve Moran, Shaw Project Manager.....Office (865) 690-3211, cell (607-9148)  
Brandi Little, Alabama Department of Environmental Management.....(334) 274-4226  
Lisa Holstein, FTMC Transition Force.....(256) 848-7455  
Shaw EH&S Hot Line.....(866) 299-3445

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Attachment 1 – Evaluating OE/UXO/CWM in Support of HTRW Activities

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## 1.0 Site Work Plan Summary

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**Project Objective.** The U.S. Army is conducting studies of the environmental impact of suspected contaminants at Fort McClellan (FTMC) in Calhoun County, Alabama, under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE has contracted Shaw Environmental, Inc. (Shaw) to provide environmental services for additional soil sampling at the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, under Task Order CK10, Contract Number DACA21-96-D-0018.

The scope of work at the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, includes the following tasks:

- Conduct a surface and near-surface unexploded ordnance (UXO) survey over all areas to be included in the sampling effort.
- Provide downhole UXO avoidance support for all subsurface soil sampling to determine buried downhole hazards.
- Collect 13 surface soil samples and 4 subsurface soil samples to determine if potential site-specific chemicals are present.
- Analyze samples for TAL metals.

Attachment 1, Evaluating ordnance and explosive (OE)/UXO/chemical warfare material (CWM) Hazards in Support of hazardous, toxic, and radioactive waste (HTRW) Activities, confirms that the historical records available for the sites have been reviewed and that UXO support is required for all site activities. Additionally, based on all available information, it is anticipated that the potential for chemical warfare agents is low, and no real-time air monitoring for chemical warfare materials will be required.

UXO surface sweeps and downhole surveys of soil borings will be required to support field activities at this site. The surface sweeps and downhole surveys will be conducted to identify anomalies for the purpose of UXO avoidance. The site-specific UXO safety plan will be used to support soil sample collection activities, if incidental ordnance, explosives, or UXO are encountered and require avoidance.

***Personnel Requirements.*** Up to 4 employees are anticipated for this scope of work.

Note: All personnel on this site shall have received training, informational programs, and medical surveillance as outlined in the installation-wide safety and health plan for site investigations at FTMC and shall be familiar with the requirements of this site-specific safety and health plan (SSHP). This SSHP must be used in conjunction with the installation-wide safety and health plan and the installation-wide ordnance and explosives management plan.

## **2.0 Site Characterization and Analysis**

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### **2.1 Anticipated Hazards**

The activity hazard analysis in Chapter 5.0 contains project-specific practices utilized to reduce or eliminate anticipated site hazards. The activity hazard analysis indicates specific chemical and physical hazards that may be present and encountered during each task from on-site operations. Below each task is a list of hazards and specific actions that will be taken to control the respective hazards. These control measures may include work practice controls, engineering controls, and/or use of appropriate personal protective equipment (PPE).

Table 2-1 contains the toxicological properties of chemicals anticipated or to be used at the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X.

Attachment 1, Evaluating Ordnance and Explosives OE/UXO/CWM Hazards in Support of HTRW Activities, has been prepared to identify additional UXO site information. Although the potential for encountering UXO is low, Shaw personnel will follow the site-specific MEC safety plan to ensure that potential UXO hazards are identified and mitigated.

### **2.2 General Site Information**

**Location of Site.** FTMC is located in the foothills of the Appalachian Mountains of northeastern Alabama near the cities of Anniston and Weaver in Calhoun County. FTMC is approximately 60 miles northeast of Birmingham, 75 miles northwest of Auburn, and 95 miles west of Atlanta, Georgia. FTMC consists of three main areas of government-owned and leased properties: Main Post, Pelham Range, and Choccolocco Corridor (lease terminated in May 1998).

Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, are located in the northern area of FTMC. The area for the additional soil sampling is 123 acres.

**Duration of Planned Employee Activity.** Employee activity duration is anticipated to be less than 1 week.



**Table 2-1**  
**Toxicological Properties of Chemicals**  
**Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and**  
**93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact**  
**Areas, Parcels 133Q-X and 134Q-X**  
**Fort McClellan, Calhoun County, Alabama**

(Page 1 of 4)

Substance [CAS]	IP <sup>a</sup> (eV)	Odor Threshold (ppm)	Route <sup>b</sup>	Symptoms of Exposure	Treatment	TWA <sup>c</sup>	STEL <sup>d</sup>	Source <sup>e</sup>	IDLH (NIOSH) <sup>f</sup>
Arsenic [7440-38-2]	NA	NA	Inh Ing Con	Cough, diarrhea, shortness of breath, vomiting, grey skin. Redness	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.01 mg/m <sup>3</sup> 0.01 mg/m <sup>3</sup>	(Ca) 0.002 mg/m <sup>3</sup>	PEL TLV REL	5 mg/m <sup>3</sup>
Antimony [7440-36-0]	NA	NA	Inh Ing Con	Coughing, abdominal pain, burning sensation, vomiting, diarrhea,	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup>		PEL TLV REL	50 mg/m <sup>3</sup>
Barium [7440-39-3]	NA	NA	Inh Ing Con	Cough, sore throat  Redness	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup>		PEL TLV REL	NA
Fuel oil (diesel oil, medium)	?	?	Ing Inh Con	Ingestion causes nausea, vomiting, and cramps; depres- sed central nervous system, headache, coma, death; pulmonary irritation; kidney and liver damage; aspiration causes severe lung irritation, coughing, gagging, dyspnea, substernal stress, pulmonary edema; bronchopneumonia; excited, then depressed, central nervous system.	Eye: Irrigate promptly Skin: Soap wash Breath: Respiratory support Swallow: Immediate medical attention Aspiration: Immediate medical attention			PEL TLV REL	

Table 2-1

**Toxicological Properties of Chemicals  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

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Substance [CAS]	IP <sup>a</sup> (eV)	Odor Threshold (ppm)	Route <sup>b</sup>	Symptoms of Exposure	Treatment	TWA <sup>c</sup>	STEL <sup>d</sup>	Source <sup>e</sup>	IDLH (NIOSH) <sup>f</sup>
Gasoline [8006-61-9]	?	0.3	Inh Ing Con	Intoxication, headaches, blurred vision, dizziness, nausea; eye, nose throat irritation; potential kidney and other cancers. Carcinogenic.	Eye: Irrigate immediately (15 min) Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	300 ppm 300 ppm Ca, lowest feasible conc. (LOQ 15 ppm)	500 ppm 500 ppm	PEL TLV REL	1400 ppm (10% LEL)
Lead {7439-92-1}	N/A	N/A	Inh Ing Con	Lightheadedness; nausea, headache; numbness of the extremities, muscular weakness; irritation of the eyes and nose; dermatitis; chemical pneumonia; giddiness.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.050 mg/m <sup>3</sup> 0.050 mg/m <sup>3</sup> 0.100 mg/m <sup>3</sup>		PEL TLV REL	100 mg/m <sup>3</sup>
Isopropyl alcohol (isopropanol) [67-63-0]	10.16	43-200	Inh Ing Con	Mild irritation of the eyes, nose, and throat; drowsiness, dizziness, headache; dry, cracked skin.	Eye: Irrigate immediately Skin: Water flush Breath: Respiratory support Swallow: Immediate medical attention	400 ppm 400 ppm 400 ppm	500 ppm 500 ppm 500 ppm	PEL TLV REL	2,000 ppm
Motor Oil [NA]	?	?	Inh Ing	Irritated eyes, skin, respiratory system; usually only a problem if misted or ingested.	Eye: Irrigate immediately (15 min) Skin: Soap wash immediately Swallow: Immediate medical attention			PEL TLV REL	
Nitric acid [7697-37-2]	11.95	0.3-1	Inh Ing Con	Irritated eyes, mucous membranes, and skin; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion.	Eye: Irrigate immediately Skin: Water flush promptly Breath: Respiratory support Swallow: Immediate medical attention	2 ppm 2 ppm 2 ppm	4 ppm 4 ppm 4 ppm	PEL TLV REL	25ppm

**Table 2-1**  
**Toxicological Properties of Chemicals**  
**Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and**  
**93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact**  
**Areas, Parcels 133Q-X and 134Q-X**  
**Fort McClellan, Calhoun County, Alabama**

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Substance [CAS]	IP <sup>a</sup> (eV)	Odor Threshold (ppm)	Route <sup>b</sup>	Symptoms of Exposure	Treatment	TWA <sup>c</sup>	STEL <sup>d</sup>	Source <sup>e</sup>	IDLH (NIOSH) <sup>f</sup>
Nitroglycerin [55-63-0]	NA	NA	Inh Ing Con	Abdominal ramps, blue lips and fingernails, dizziness, headache, labored breathing	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	skin 2 mg/m <sup>3</sup> 0.46 mg/m <sup>3</sup> skin	0.1 mg/m <sup>3</sup> skin	PEL TLV REL	75 mg/m <sup>3</sup>
Portland cement [ 65997-15-1 ]	NA	NA	Inh	Fine gray powder that can be irritating if inhaled or in eyes.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	5 mg/m <sup>3</sup> respirable fraction 15 mg/m <sup>3</sup> total dust 10 mg/m <sup>3</sup> 10 mg/m <sup>3</sup> / total dust		PEL  TLV REL	5000 mg/m <sup>3</sup>
Sodium hydroxide [1310-73-2]	NA	NA	Inh Ing Con	Irritated nose; pneumonitis; burns eyes, and skin; temporary loss of hair.	Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention	2 mg/m <sup>3</sup> C 2 mg/m <sup>3</sup> C 2 mg/m <sup>3</sup>		PEL TLV REL	10 mg/m <sup>3</sup>

NOTE: Additional chemical safety information for arsenic, lead, antimony, barium and nitroglycerin follows Table 2-1.

<sup>a</sup>IP = Ionization potential (electron volts).

<sup>b</sup>Route = Inh, Inhalation; Abs, Skin absorption; Ing, Ingestion; Con, Skin and/or eye contact.

<sup>c</sup>TWA = Time-weighted average. The TWA concentration for a normal work day (usually 8 or 10 hours) and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day without adverse effect.

<sup>d</sup>STEL = Short-term exposure limit. A 15-minute TWA exposure that should not be exceeded at any time during a workday, even if the TWA is not exceeded.

<sup>e</sup>PEL = Occupational Safety and Health Administration (OSHA) permissible exposure limit (29 CFR 1910.1000, Table Z).

AEL = Airborne Exposure Limit.

TLV = American Conference of Governmental Industrial Hygiene (ACGIH) threshold limit value—TWA.

REL = National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit.

<sup>f</sup>IDLH (NIOSH)—Immediately dangerous to life or health (NIOSH). Represents the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing or irreversible health effects.

NE = No evidence could be found for the existence of an IDLH (NIOSH Pocket Guide to Chemical Hazards, Pub. 1998).

**Table 2-1**

**Toxicological Properties of Chemicals**

**Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X**

**Fort McClellan, Calhoun County, Alabama**

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C = Ceiling limit value which should not be exceeded at any time.  
Ca = Carcinogen.  
NA = Not applicable.  
? = Unknown.  
LEL = Lower explosive limits.  
LC<sub>50</sub> = Lethal concentration for 50 percent of population tested.  
LD<sub>50</sub> = Lethal dose for 50 percent of population tested.  
NIC = Notice of intended change (ACGIH).

References:

American Conference of Governmental Industrial Hygienists Guide to Occupational Exposure Values, 2005, compiled by the American Conference of Governmental Industrial Hygienists.

Amoore, J. E. Hautula, "Odor as an Aid to Chemical Safety," Journal of Applied Toxicology, 1983.

Clayton, George D., Clayton, F. E., Patty's Industrial Hygiene and Toxicology, 3rd ed., John Wiley & Sons, New York.

Documentation of TLVs and BEIs, American Conference of Governmental Industrial Hygienists, 6th ed., 2005.

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Respirator Selection Guide, 3M Occupational Health and Safety Division, 1993.

Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Van Nostrand and Reinhold, 1977.

Warning Properties of Industrial Chemicals Occupational Health Resource Center, Oregon Lung Association.

Workplace Environmental Exposure Levels, American Industrial Hygiene Association, 1992.

## ***Site Descriptions***

***Former Tank Ranges, Parcels 92Q-X and 93Q-X.*** Parcels 92Q-X and 93Q-X are identified as two former tank ranges and appear on historical maps of FTMC from 1956 and 1959. Parcel 92Q-X is located south of Falcon Road and extends to the southeast toward Mout Road. Syracuse Street spans the length of the parcel near its western border. Parcel 93Q-X is located just west of Parcel 92Q-X. The exact size and type of ordnance fired at these parcels and the dates of use are unknown.

***Former Grenade Range, Parcel 107Q-X.*** Parcel 107Q-X is identified as a former grenade range. Exact dates of use and exact size of the range are unknown. The range fan extends toward the southeast; therefore, direction of fire is suspected to have been to the southeast. The range fan encompasses Parcels 93Q-X, 133Q-X, and 134Q-X in their entirety and extends beyond this SI study area. The range fan almost completely covers Parcel 92Q-X. The exact types of ordnance used are unknown; however, based on the title of the range (Former Grenade Range), it is assumed that grenades were used here.

***Impact Areas, Parcels 133Q-X and 134Q-X.*** Parcels 133Q-X and 134Q-X are identified in the environmental baseline survey as impact areas. Parcel 133Q-X is located within the range fan of Parcel 93Q-X. Parcel 134Q-X is located just to the east of the impact area of Parcel 92Q-X.

***Pathways for Hazardous Substance Dispersion.*** Possible pathways for hazardous substances in the area are limited to soils.

### 3.0 Personal Protective Equipment

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The work activities will begin in the following levels of protection. Also, a complete description of Level D, Modified Level D, and Level C PPE is provided.

Task	Initial Level of PPE
Initial UXO avoidance sweep and equipment staging	Level D
Utility clearance	Level D
Surface and subsurface soil sampling	Level D*
Surveying	Level D

\*Initial level will be raised to Level C or higher if air monitoring results in the breathing zone (BZ) are greater than action levels.

**Level D.** The minimal level of protection that will be required of IT personnel at the site will be Level D. The following equipment will be used for Level D protection:

- Coveralls or work clothing
- Leather work gloves (when necessary)
- Steel-toed safety boots
- Safety glasses
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment)
- Nitrile gloves for soil sample collection.

**Modified Level D.** The following equipment will be used for Level D-Modified protection:

- Permeable Tyvek, Kleenguard, or its equivalent
- Latex boot covers
- Nitrile, heavy work, or latex gloves
- Steel-toed safety boots
- Safety glasses
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment).

**Level C.** Level C protection will not be used unless air-monitoring data indicate the need for upgrade; however, the equipment shall be readily available on site. The following equipment will be used for Level C protection:

- National Institute of Occupational Safety and Health/Mine Safety and Health Administration-approved full-face, air-purifying respirator equipped with organic vapor/acid gas cartridge in combination with high-efficiency particulate air filter
- Hooded, Saran-coated Tyvek, taped at gloves, boots, and respirator
- Nitrile gloves (outer)
- Latex or lightweight nitrile gloves (inner)
- Neoprene steel-toed boots or polyvinyl chloride overbooties/steel-toed safety boots
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment).

## 4.0 Site Monitoring

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The environmental contaminants of concern resulting from former activities on the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact Areas, Parcels 133Q-X and 134Q-X, are primarily metals.

Table 4-1 contains action levels for site monitoring on the Former Tank Ranges, Former Grenade Range, and Impact Areas.

**Chemical.** The field geologist shall perform air monitoring during the soil sampling operations. A calibrated photo ionization detector (e.g., Hnu DL-101 or equivalent) organic vapor analyzer will be used to monitor the sampling locations and BZs to determine if any organic material may be present that would necessitate upgrading of the protection level. A calibrated combustible gas/oxygen indicator will be utilized to monitor the borehole, work areas, and BZs to determine if any combustible/flammable levels may be present that would necessitate evacuation of the work area. Table 4-2 contains the air monitoring frequency and location for site monitoring at the work site.

**Unexploded Ordinance.** UXO support for soil sampling activities is specified in the site-specific UXO safety plan. The UXO specialist will perform UXO avoidance sweeps prior to soil sampling. During this operation, UXO on the surface and in the shallow subsurface will be detected and marked for avoidance during field operations. Additionally, downhole magnetometer surveys will be performed to detect metal objects in the borehole during subsurface soil sampling using a hand auger. The sampling/boring location will be moved to avoid subsurface metal objects. The practice of UXO avoidance shall be implemented for all intrusive activities.

If UXO is encountered, personnel will contact the site manager and UXO specialist immediately. Personnel will evacuate the immediate area and secure it.



**Table 4-1**

**Action Levels  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

When in Level C PPE

Analyte	Action Level	Required Action <sup>a</sup>
VOCs (volatile organic compound)	$\geq 10$ ppm above background in breathing zone (BZ)	Stop work, evacuate work area, upgrade to Level B; Notify H&S manager
LEL (lower explosive limit)	$\leq 10$ % LEL $\geq 10$ % LEL	Normal operations Stop work, identify source

When in Level D Modified/D PPE

Analyte	Action Level	Required Action <sup>b</sup>
VOCs	$\geq 1$ ppm above background in BZ	Stop activities, suspend work activities for 15 to 30 minutes, if readings are sustained then upgrade to Level C PPE; Notify H&S manager
LEL (lower explosive limit)	$\leq 10$ % LEL $\geq 10$ % LEL	Normal operations Stop work, identify source. Monitor for VOCs

**Table 4-1**

**Action Levels**  
**Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and**  
**93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact**  
**Areas, Parcels 133Q-X and 134Q-X**  
**Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

When in Support Zone

Analyte	Action Level	Required Action
VOCs	$\geq 1$ ppm above background in BZ	Evacuate support zone and re-establish perimeter of exclusion zone.

<sup>a</sup> Four instantaneous peaks in any 15-minute period or a sustained reading for 5 minutes in excess of the action level will trigger a response.

<sup>b</sup> Contact with the H&S manager must be made prior to continuance of work. The H&S manager may then initiate perimeter/integrated air sampling along with additional engineering controls.

**No one is permitted to downgrade levels of PPE without authorization from the H&S manager.**

BZ – Breathing zone.

H&S – Health and safety.

LEL – Lower explosive limit.

PPE – Personal protective equipment.

ppm – Parts per million.

VOC – Volatile organic compound.

**Table 4-2**

**Air Monitoring Frequency and Location  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X, and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

Work Activity	Instrument	Frequency	Location
UXO avoidance sweeps	OV Monitor	Initially for area Periodically	Breathing zone (BZ) of employees
Soil sampling	OV Monitor LEL/ O <sub>2</sub>	Periodically Periodically	BZ of employees Bore hole

OV = Organic vapor.

LEL/O<sub>2</sub> = Lower explosive limit/oxygen level

## **5.0 Activity Hazard Analysis**

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The attached activity hazard analysis (Table 5-1) is provided for the following activities:

- Initial UXO avoidance sweep and equipment staging
- Surveying
- Moving and shipping collected samples.

All injuries and illnesses must be immediately reported to the site manager or the site safety and health officer, who will then notify off-site personnel and organizations as necessary.

If emergency hospital care must be provided, the victim shall be treated at Northeast Regional Medical Center. Directions to the hospital are provided on Figure 5-1.

For nonserious injuries that require medical evaluation beyond on-site first aid, the injured employee shall be transported to Southern Family Practice Occupational Clinic. Directions to the clinic are provided on Figure 5-2.

**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging	Slip, trip, and fall hazards	<ul style="list-style-type: none"> <li>Determine best access route before transporting equipment.</li> <li>Practice good housekeeping; keep work area picked up and clean as feasible.</li> <li>Continually inspect the work area for slip, trip, and fall hazards.</li> <li>Look before you step; ensure safe and secure footing.</li> </ul>
	Heavy lifting	<ul style="list-style-type: none"> <li>Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment.</li> </ul>
	Falling objects	<ul style="list-style-type: none"> <li>Stay alert and clear of materials suspended overhead; wear hard hat and steel-toed boots.</li> </ul>
	Flying debris, dirt, dust, etc.	<ul style="list-style-type: none"> <li>Wear safety glasses/goggles; ensure that eye wash is in proper working condition.</li> </ul>
	Pinch points	<ul style="list-style-type: none"> <li>Keep hands, fingers, and feet clear of moving/suspended materials and equipment.</li> <li>Beware of contact points.</li> <li>Stay alert at all times!</li> </ul>
	Cuts/bruises	<ul style="list-style-type: none"> <li>Use cotton or leather work gloves for material handling.</li> </ul>
	Bees, spiders, and snakes	<ul style="list-style-type: none"> <li>Inspect work area carefully and avoid placing hands and feet into concealed areas.</li> </ul>
	Ticks	<ul style="list-style-type: none"> <li>Wear light colored clothing (can see ticks better).</li> <li>Mow vegetated and small brush areas.</li> <li>Wear insect repellent.</li> <li>Wear long sleeves and long pants.</li> <li>Visually check oneself promptly and frequently after exiting the work area.</li> </ul>
	Fire	<ul style="list-style-type: none"> <li>Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.</li> </ul>
	Hazard communication	<ul style="list-style-type: none"> <li>Label all containers as to contents and dispose of properly.</li> <li>Ensure Material Safety Data Sheets (MSDS) are available for hazardous chemicals used on site.</li> </ul>
	Noise	<ul style="list-style-type: none"> <li>Sound levels above 85 decibels (dBA) mandates hearing protection.</li> </ul>
	Lighting	<ul style="list-style-type: none"> <li>Adequate lighting will be provided to ensure a safe working environment.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Poison ivy/oak/sumac	<ul style="list-style-type: none"><li>• Avoid plant areas if possible.</li><li>• Wear long sleeves and long pants.</li><li>• Promptly wash clothing that has contacted poisonous plants.</li><li>• Wash affected areas immediately with soap and water.</li></ul>
	Heat rash	<ul style="list-style-type: none"><li>• Keep the skin clean and dry.</li><li>• Change perspiration-soaked clothing, as necessary.</li><li>• Bathe at end of work shift or day.</li><li>• Apply powder to affected area.</li></ul>
	Heat cramps	<ul style="list-style-type: none"><li>• Drink plenty of cool fluids even when not thirsty.</li><li>• Provide cool fluid for work crews.</li><li>• Move victim to shaded, cool area.</li></ul>
	Heat exhaustion	<ul style="list-style-type: none"><li>• Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature).</li><li>• Set up work/rest periods.</li><li>• Use the "buddy system."</li><li>• Allow workers time to acclimate.</li><li>• Have ice packs available for use.</li><li>• Take frequent breaks.</li></ul>

**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

(Page 3 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Heat stroke	<ul style="list-style-type: none"> <li>• Evaluate possibility of night work.</li> <li>• Perform physiological monitoring on workers during breaks.</li> <li>• Wear body cooling devices.</li> </ul>
	Contact with moving equipment/vehicles	<ul style="list-style-type: none"> <li>• Work area will be barricaded/demarcated.</li> <li>• Equipment will be laid out in an area free of traffic flow.</li> <li>• Barricades shall be used on or around work areas when it is necessary to prevent the inadvertent intrusion of pedestrian traffic.</li> <li>• Barriers shall be used to protect workers from vehicular traffic.</li> <li>• Barriers shall be used to guard excavations adjacent to streets or roadways.</li> <li>• Flagging shall be used for the short term (less than 24 hours) to identify hazards until proper barricades or barriers are provided.</li> <li>• Heavy equipment shall have backup alarms.</li> </ul>
	Lightning strikes	<ul style="list-style-type: none"> <li>• Whenever possible, halt activities and take cover.</li> <li>• If outdoors, get away from elevated locations (i.e., roofs, ladders, equipment).</li> <li>• Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground).</li> <li>• Seek shelter in a building if possible.</li> <li>• Stay away from windows.</li> <li>• If available, crouch under a group of trees instead of one.</li> <li>• Remain 6 feet away from tree trunk if seeking shelter beneath tree(s).</li> <li>• If in a group, keep 6 feet of distance between people.</li> </ul>
	Thunderstorms, tornados	<ul style="list-style-type: none"> <li>• Listen to radio or TV announcements for pending weather information.</li> <li>• Cease field activities during thunderstorm or tornado warnings.</li> <li>• Seek shelter. Do not try to outrun a tornado.</li> </ul>
Surveying	Slip, trip, and fall hazards	<ul style="list-style-type: none"> <li>• Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe boots when working in the field.</li> <li>• Provide adequate lighting in all work areas.</li> <li>• Whenever possible, avoid routing cords and hoses across walking pathways.</li> <li>• Flag or cover inconspicuous holes to protect against falls.</li> <li>• Work areas will be kept clean and orderly.</li> <li>• Garbage and trash will be disposed of daily in approved refuse containers.</li> <li>• Tools and accessories will be properly maintained and stored.</li> <li>• Work areas and floors will be kept free of dirt, grease, and slippery materials.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

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Activity	Potential Hazards	Recommended Controls
Surveying (continued)	Traffic accidents	<ul style="list-style-type: none"><li>• Place physical barrier (i.e., barricades, fencing) around work areas regularly occupied by pedestrians.</li><li>• If working adjacent to roadways, have workers wear fluorescent orange vests.</li><li>• Use warning signs or lights to alert oncoming traffic.</li><li>• Assign flag person(s) if necessary to direct local traffic.</li><li>• Set up temporary parking locations outside the immediate work area.</li><li>• Motor vehicle operators shall obey all posted traffic signs, signals, and speed limits.</li><li>• Pedestrians have the right-of-way.</li><li>• Wear seat belts when vehicles are in motion.</li></ul>
	Wildlife hazards	<ul style="list-style-type: none"><li>• Workers should be cautious when driving through the site in order to avoid encounters with passing animals.</li></ul>
	Biological hazards	<ul style="list-style-type: none"><li>• Walking through overgrown grass areas, watch for snakes (rattlesnakes, moccasins, copperheads).</li></ul>
	Ticks	<ul style="list-style-type: none"><li>• Wear light colored clothing (makes ticks more visible).</li><li>• Mow vegetated and small brush areas.</li><li>• Wear insect repellent.</li><li>• Wear long sleeves and long pants.</li><li>• Visually check oneself promptly and frequently after exiting the work area.</li></ul>
	Poison ivy/oak/sumac	<ul style="list-style-type: none"><li>• Avoid plant areas if possible.</li><li>• Wear long sleeves and long pants.</li><li>• Promptly wash clothing that has contacted poisonous plants.</li><li>• Wash affected areas immediately with soap and water.</li></ul>
	UXO	<ul style="list-style-type: none"><li>• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.</li><li>• If UXO is encountered, cease all activities, mark the location, and notify the site manager.</li></ul>



**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

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Activity	Potential Hazards	Recommended Controls
Surface soil sampling	Cross-contamination and contact with potentially contaminated materials	<ul style="list-style-type: none"> <li>Stop immediately at any sign of obstruction.</li> <li>Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination.</li> <li>Only essential personnel will be in the work area.</li> <li>All personnel will follow good hygiene practices.</li> <li>Proper decontamination procedures will be followed.</li> <li>All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.</li> </ul>
	Cut hazards	<ul style="list-style-type: none"> <li>Use care when handling glassware.</li> <li>Wear adequate hand protection.</li> </ul>
	Slip, trip, and fall hazards	<ul style="list-style-type: none"> <li>Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe/shank boots when working in the field.</li> <li>Whenever possible, avoid routing cords and hoses across walking pathways.</li> <li>Flag or cover inconspicuous holes to protect against falls.</li> </ul>
	Bees, spiders, and snakes	<ul style="list-style-type: none"> <li>Workers shall inspect the work area carefully and avoid placing hands and feet into concealed areas.</li> <li>Evaluate need for sensitive workers to have prescribed antibiotic or medicine to combat onset of symptoms.</li> </ul>
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> <li>Avoid plant areas if possible.</li> <li>Wear long sleeves and long pants.</li> <li>Promptly wash clothing that has contacted poisonous plants.</li> <li>Wash affected areas immediately with soap and water.</li> </ul>
	Cold stress	<ul style="list-style-type: none"> <li>Workers should wear insulated clothing when temperatures drop below 40°F.</li> <li>Drink warm beverages on breaks. Refrain from drinking caffeinated beverages.</li> <li>Remove wet clothing promptly.</li> <li>Take breaks in warm areas.</li> <li>Reduce work periods as necessary.</li> <li>Layer work clothing.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

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Activity	Potential Hazards	Recommended Controls
Surface soil sampling (continued)	Heat rash	<ul style="list-style-type: none"> <li>Keep the skin clean and dry.</li> <li>Change perspiration-soaked clothing, as necessary.</li> <li>Bathe at end of work shift or day.</li> <li>Apply powder to affected area.</li> </ul>
	Heat cramps	<ul style="list-style-type: none"> <li>Drink plenty of cool fluids even when not thirsty.</li> <li>Provide cool fluid for work crews.</li> <li>Move victim to shaded, cool area.</li> </ul>
	Heat exhaustion	<ul style="list-style-type: none"> <li>Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature).</li> <li>Set up work/rest periods.</li> <li>Use the buddy system.</li> <li>Allow workers time to acclimate.</li> <li>Have ice packs available for use.</li> <li>Take frequent breaks.</li> </ul>
	Heat stroke	<ul style="list-style-type: none"> <li>Evaluate possibility of night work.</li> <li>Perform physiological monitoring on workers during breaks.</li> <li>Wear body cooling devices.</li> </ul>
	Lightning strikes	<ul style="list-style-type: none"> <li>Whenever possible, halt activities and take cover.</li> <li>If outdoors, get away from elevated locations (i.e., roofs, ladders, equipment).</li> <li>Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground).</li> <li>Seek shelter in a building if possible.</li> <li>Stay away from windows.</li> <li>If available, crouch under a group of trees instead of one single tree.</li> <li>If in a group, keep 6 feet of distance between people.</li> </ul>
	UXO	<ul style="list-style-type: none"> <li>UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.</li> <li>If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Supplemental Soil Sampling at Former Tank Ranges, Parcels 92Q-X and  
93Q-X, Former Grenade Range, Parcel 107Q-X and Impact  
Areas, Parcels 133Q-X and 134Q-X  
Fort McClellan, Calhoun County, Alabama**

(Page 7 of 7)

Activity	Potential Hazards	Recommended Controls
Moving and Shipping Collected Samples	Heavy lifting	<ul style="list-style-type: none"><li>• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.</li></ul>
	Pinch points	<ul style="list-style-type: none"><li>• Keep hands, fingers, and feet clear of moving/suspended materials and equipment.</li><li>• Beware of contact points.</li><li>• Stay alert at all times!</li></ul>
	Cut hazards	<ul style="list-style-type: none"><li>• Wear adequate hand protection. Use care when handling glassware.</li></ul>
	Hazard communication	<ul style="list-style-type: none"><li>• Label all containers as to contents and associated hazards.</li></ul>
	Heavy lifting	<ul style="list-style-type: none"><li>• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.</li></ul>
Material Storage	Flammable and combustible liquids	<ul style="list-style-type: none"><li>• Store in NO SMOKING AREA.</li><li>• Fire extinguisher readily available.</li><li>• Transfer only when properly grounded and bonded.</li></ul>



FIGURE 5-1 Hospital Emergency Route Map

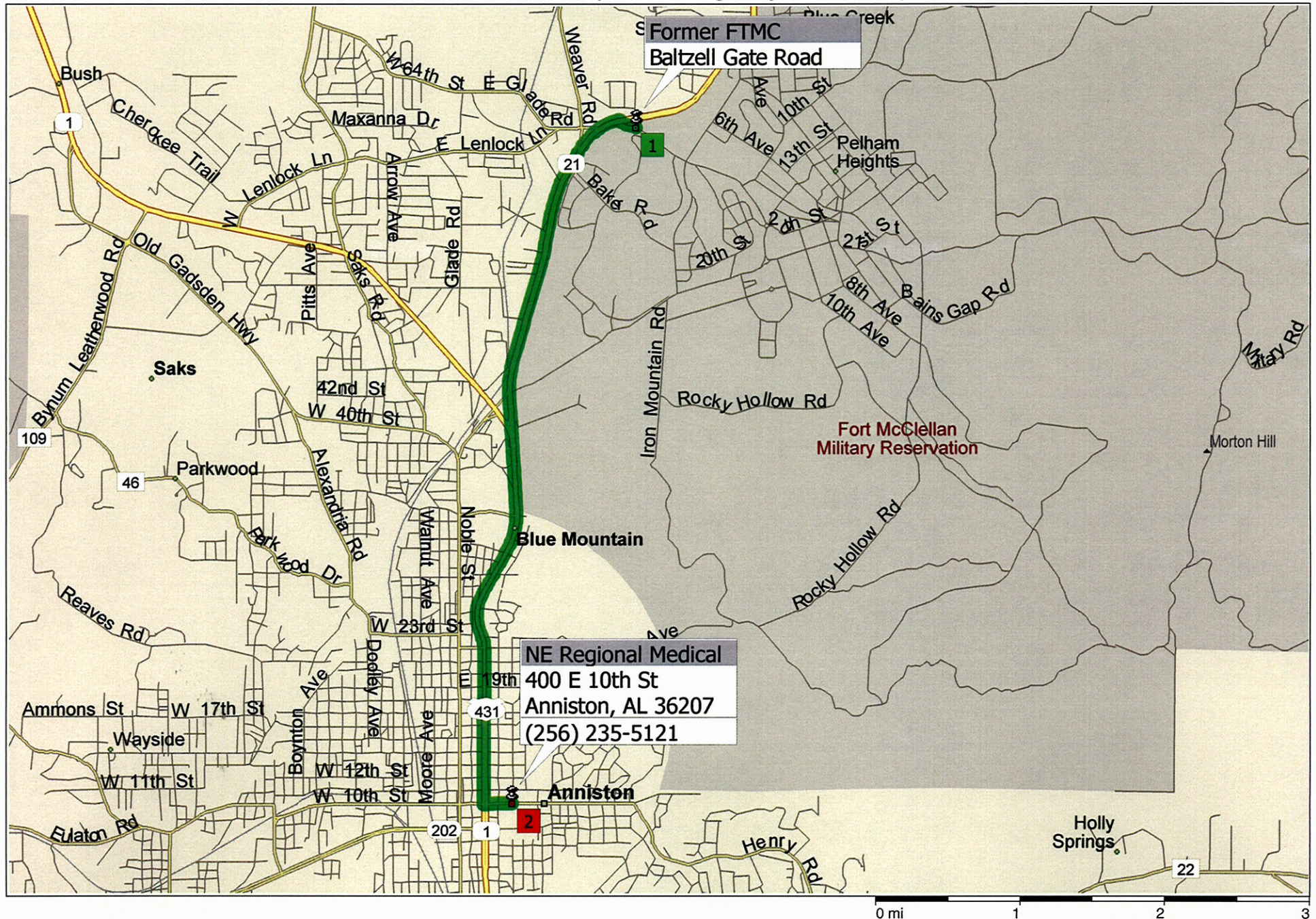
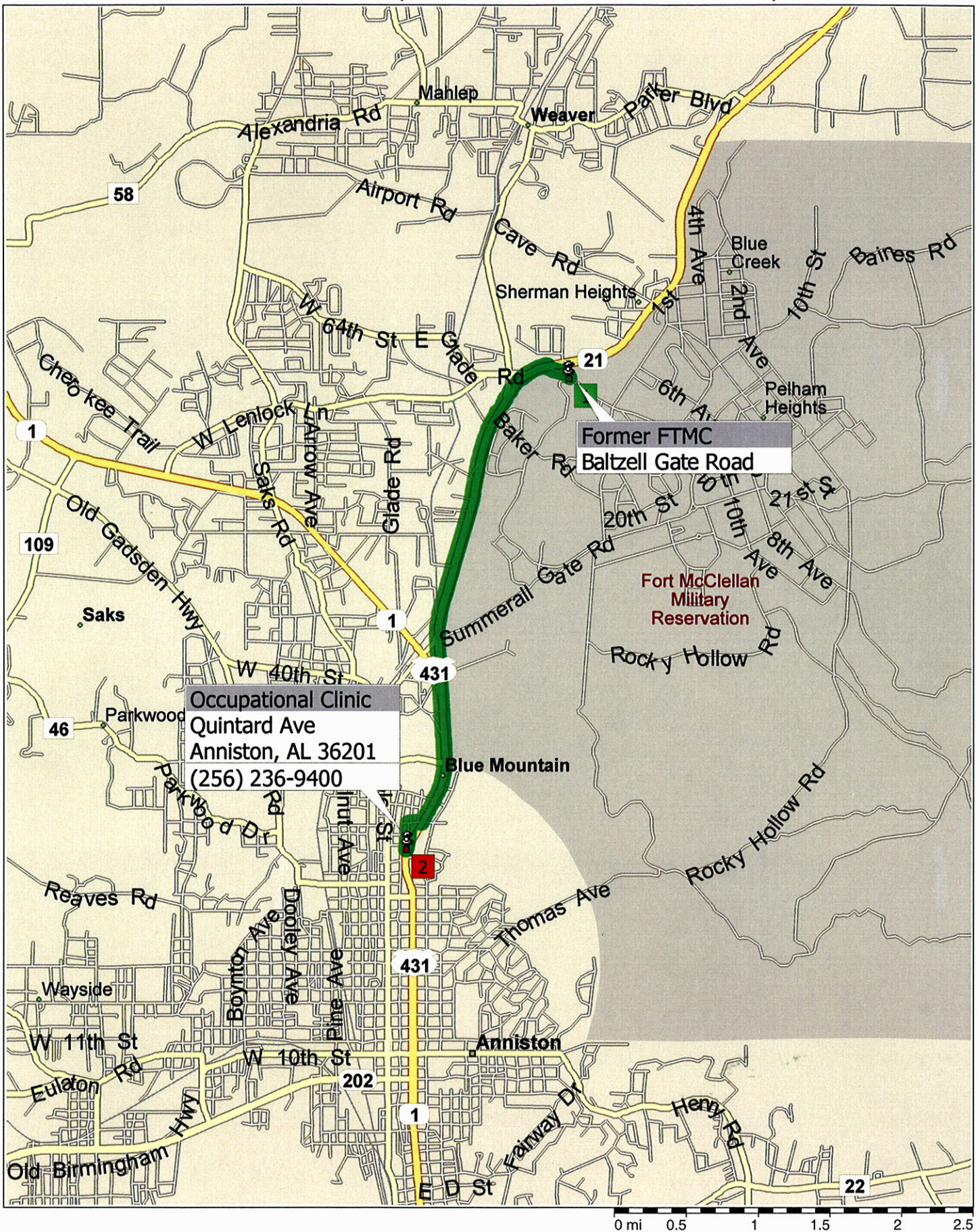




FIGURE 5-2 Occupational Medical Clinic Route Map





**ATTACHMENT 1**

**EVALUATING OE/UXO/CWM HAZARDS IN SUPPORT  
OF HTRW ACTIVITIES**

Site Name: Former Tank Ranges

Job Number: 796887

Name of person completing form: Jeffrey Tarr

Signature: Jeffrey Tarr 3/22/07

Date: March 22, 2007

Title: Geologist

1a. Have the historical records available for this HTRW site been reviewed?

Yes

No

☒☐

If the answer to 1a. is yes, proceed to 1b.

If the answer to 1a. is no, review site information prior to completing this form.

1b. Is there recent information (site walk, worker interviews, etc.) that indicates a potential OE/CWM hazard at this site?

Yes

No

☒☐

Proceed to 2.

2. According to the records review, is this site known or suspected to have been used for:

2a. Manufacturing, production, or shipping of conventional or chemical warfare materiel (CWM) OE:

Yes

No

☐☒

Live fire testing of any ordnance:

☒☐

Conventional or CWM OE training:

☐☒

Storage of conventional or CWM OE:

☐☒

Disposal or demilitarization of conventional or CWM OE:

☐☒

Other (specify):

2b. Manufacturing, production, or shipping of chemical

Yes

No

agent:

☐☒

Research or testing of chemical agent:

☐☒

Chemical agent related training:

☐☒

Storage of chemical agent:

☐☒

Disposal or demilitarization of chemical agent:

☐☒

Other (specify): Former CWM Areas

only.

Any 2a question answered "YES" indicates UXO support is required for all site activities. If all 2a questions are answered "NO", UXO support may not be required. Refer to Installation-Wide Safety and Health Plan (SHP) for additional information concerning UXO support. Proceed to question 2b.

Any 2b question answered "YES" requires the remainder of this form to be completed. If all 2b questions are answered "NO", real-time monitoring for chemical agent will not be required and completing the remainder of this form is not required. Refer to SHP for additional information concerning agent monitoring.

Additional space for notes and explanations on page 4.

Continue to page 2 of 4 –

# Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities

Site Name: Tank Ranges Soil Sampling

Job Number: 796887

Page 2 of 4

Date: March 2007

3. For sites where the manufacturing, testing, storage, or disposal of CWM is suspected:	Yes	No
Is there evidence that the CWM is/was containerized in potentially unexploded ordnance:	<input type="checkbox"/>	<input type="checkbox"/>
Is there evidence that the CWM is/was containerized in nonexplosive containers:	<input type="checkbox"/>	<input type="checkbox"/>
Is there evidence that the CWM is open to the environment (i.e., in an open container or free liquid/solid in the soil/water):	<input type="checkbox"/>	<input type="checkbox"/>
Is there evidence that the CWM hazard has been removed from the site or that the site has been decontaminated:	<input type="checkbox"/>	<input type="checkbox"/>
Has the site been previously monitored or sampled for chemical agent or agent breakdown products:	<input type="checkbox"/>	<input type="checkbox"/>
For any "YES" above, was the agent or breakdown product identified?	<input type="checkbox"/>	<input type="checkbox"/>

For any "Yes", list types of agent (mustard, lewisite, etc.) and the form (in ordnance, in drum, etc.) the CWM is expected to be found (or state "unknown"):

The scope of work involves soil sampling using a hand auger with UXO anomaly avoidance only.

List agent breakdown products identified:

4. Defining the Potential for the Presence of CWM:	Agent Monitoring Requirements for Site Activities:
4a. High Presence Potential – Definition: CWM is known or highly suspected to be present at the site in a condition (within ordnance and/or nonexplosive container, or in an uncontainerized form in sufficient volume that weathering of the product has not rendered it harmless) that will cause potential harm to personnel if it is encountered.	Mandatory personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP).
4b. Moderate Presence Potential - Definition: CWM is suspected to have been present at the site, but has been previously removed and/or decontaminated, or has been open to the environment such that it is expected to have degraded and been rendered harmless.	The need for personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples will be reviewed on a site-by-site basis. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP).
4c. Low Presence Potential – Definition: No indications that CWM will be present in quantity or reactivity (in munitions, projectiles, drums, etc.).	No specific personal or area monitoring for chemical agents required beyond what is specified in the SHP.

Continue to page 3 of 4 -



Site Name: Former Tank Ranges – Soil Sampling

Job Number: 796887

Date: March 2007

Based on the information available for this site, including information gathered during completion of this form, the potential for CWM to be present at this site, as defined above, is expected to be: **LOW**

Exceptions/Explanations: Extensive work has been completed for all these sites. (additional space for notes and explanations on page 4)

**5. Based on the information provided in questions 1 through 5, above, the following guidelines will be used for establishing PPE requirements for activities to be performed at this site; Specific details are provided in the SSHP:**

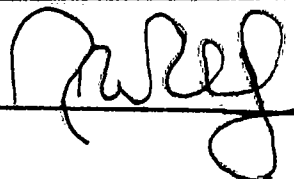
<b>5a.</b> High Exposure Potential - High exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).	Subject to review by the Shaw health and safety manager, PPE for all personnel in the exclusion zone at a site identified as having a "High Exposure Potential" will be Level B (supplied air) or Level C (full-face respirator with HEPA/Acid Gas/OV cartridges w/ emergency egress hood) and chemically resistant coveralls. Specific PPE requirements are in the SSHP for this site.
<b>5b.</b> Moderate Exposure Potential - Moderate exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).	Subject to review by the Shaw health and safety manager, PPE for all personnel in the exclusion zone at a site identified as having a "Moderate Exposure Potential" will be Modified Level D (disposable coveralls and emergency egress hood) carried by all personnel. Specific PPE requirements are in the SSHP for this site.
<b>5c.</b> Low Exposure Potential - Low exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).	Subject to review by the Shaw health and safety manager, no additional PPE requirements above those stated in the SSHP are needed for sites identified as having "Low Exposure Potential." Specific PPE requirements are in the SSHP for this site.

Based on all available information, the exposure potential at this site is considered to be: **LOW**

Exceptions/Explanations: (see page 4)

**Review Signatures:**

Shaw UXO Technical Manager

Date: 22 MAR 07

Shaw H&amp;S Specialist



Date:

3-26-07

**Site Name: Former Tank Ranges – Soil Sampling**

**Job Number: 796887**

**Date: March 2007**

***Additional Notes and Explanations:***

Shaw completed a Site Investigation in October 2003 at the Former Tank Ranges, Parcels 92Q-X and 93Q-X, Former Grenade Range, Parcel 107Q-X and Impact Areas Parcels 133Q-X and 134Q-X. The SI consisted of the collection and analysis of 36 surface soil samples, 36 subsurface soil samples, 10 groundwater samples, 7 surface water samples, 8 sediment samples and 1 seep water sample. In addition, 10 groundwater monitoring wells were installed. Additionally, these same 10 wells were subsequently abandoned in January and March 2007. Shaw recommended “No Further Action” and unrestricted land reuse with regard to CERCLA-related hazardous substances for these sites. However, during a March 2007 teleconference between the ADEM, EPA, U.S. Fish and Wildlife, U.S. Army and Shaw personnel a decision was made to collect additional soil samples prior to site closure.

The soil sample locations are shown on Figure 1 of this site-specific work plan. All work conducted during this field effort will be performed in accordance with the Installation-Wide Safety and Health Plan and the attached Site-Specific Safety and Health Plan. The presence of unexploded ordnance (UXO) is remote, but possible since the areas are historical ranges. Therefore, Shaw will conduct UXO avoidance procedures as outlined in Appendix E of the Installation-Wide Sampling and Analysis Plan, Revision 3 (IT, 2002). A UXO technician will be present for escort service, UXO surface and near surface sweeps and all intrusive soil sampling activities.